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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,011	01/02/2001	Sundar Narayanan	10200/88	1275
43320	7590	08/23/2005		
EVAN LAW GROUP LLC 566 WEST ADAMS, SUITE 350 CHICAGO, IL 60661			EXAMINER MITCHELL, JAMES M	
			ART UNIT	PAPER NUMBER
			2813	
DATE MAILED: 08/23/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/753,011	NARAYANAN, SUNDAR	
	<b>Examiner</b>	<b>Art Unit</b>	
	James M. Mitchell	2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-11, 18, 19, 23 and 27-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-11, 18, 19, 23 and 27-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This Office action is in response to applicant's amendment filed May 27, 2005.

#### ***Allowable Subject Matter***

The indicated allowability of claims is withdrawn in view of the newly discovered reference(s) to Hong et al. (U.S. 2002/0110994). Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-11, 18, 19, 23, 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hong et al. (U.S. 2002/0110994) in combination with Liang (U.S. 6,180,502).

Hong (Fig. 4-7) discloses:

(cl. 3, 27, 28) a method of forming a semiconductor structure, comprising: forming an isolation region (46) in a semiconductor substrate (40), wherein a first oxide layer (42) is on said substrate, a first sacrificial layer (48) is on said first oxide layer, wherein said first sacrificial layer comprises an oxide (Par. 0051), and a first nitride layer ("SiN", not labeled; Par. 0051) is on said first sacrificial layer, wherein a second sacrificial layer (44)

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is between said first sacrificial layer and said first oxide layer, wherein said first sacrificial layer comprises silicon oxide (Par. 0037), said second sacrificial layer comprises silicon nitride (Par. 0018; 0037 ), said isolation region comprises an oxide (48; Par. 0042);

(cl. 4) removing first nitride, first sacrificial and second sacrificial layer (Fig.7)

(cl. 7) etching trench (Par. 0038) and filling with an oxide (Fig. 4-5);

by CVD (Par. 0014);

(cl. 8 in part) forming its first sacrificial layer on said second sacrificial layer by CVD (Par. 0014) and forming silicon nitride by CVD (Par. 0051);

(cl. 18, 18, 29, 30) and forming an electronic device comprising a semiconductor device (Par. 0002) from said semiconductor structure;

(cl. 23) forming an isolation region comprises depositing an oxide onto said first nitride layer and onto said first nitride layer and into a trench (46) adjacent first nitride, said first sacrificial and said first oxide layer (Fig. 4-5);

(cl. 31) wherein first sacrificial layer (48) is contact with first nitride layer (Par. 0051);

(cl. 32) and second sacrificial layer (44) is between (see Fig. 5) first sacrificial layer (48) and first oxide (42).

Hong does not appear to explicitly disclose that its semiconductor, active area, substrate is silicon, forming oxide by thermal oxidation or implanting ions in said substrate through oxide, or that the thickness for the first and second sacrificial layer is between 10 to 250 and 10 to 500 respectively.

Liang (Fig 23-27) utilizes a silicon substrate (item 200; Col. 5, Lines 53-55), forming said first oxide layer (407) on said substrate by thermal oxidation (Col. 9, Lines 30-32) and implanting ions (425) in said substrate through said first oxide layer (Fig. 24-25).

It would have been obvious to one of ordinary skill in the art to incorporate the process of forming a silicon substrate, using thermal oxidation and ion implantation in forming the trench isolation of Hong in order to provide a semiconductor substrate, oxide and active areas as required by Hong (Item 40,42 & 49; Par. 0037).

Neither Hong nor Lyon appears to disclose the claimed thickness of the layers. However, because applicant has not disclosed that the dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical, the limitation would have been obvious since it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

### ***Conclusion***


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jmm  
August 18, 2005

  
CARL WHITEHEAD, JR.  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800